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DRAWINGS ATTACHED.

Inventors:—ALAN CHARLES HILL and CYRIL CLEMENT MANN.



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COMPLETE SPECIFICATION.

Improvements in or relating to Control Pedals for Vehicles.

We, PRESSED STEEL COMPANY LIMITED, a British Company, of Cowley, in the City and County of Oxford, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

At the present time there is a growing tendency in the construction of vehicle bodies for the front seat structures to be in a fixed position, in order to make use of the structures to provide additional strength to the vehicle structure and also to limit the danger of the seat moving or collapsing, particularly when safety belts or harnesses are used, if the vehicle is involved in a collision. In order, then to provide the required adjustment of the distance between the front seats and the control pedals to accommodate drivers of different stature, it is necessary to introduce this adjustment by arranging the control pedals (the brake, the clutch—if used—and the throttle), to have a limited degree of fore and aft movement.

The object of the present invention is to provide a simple arrangement of control pedals capable of rapid adjustment in a fore-and-aft direction under the control of the driver.

At the present time too, it is becoming more usual to provide a hydraulic control not only for the actuation of the brakes but also for the actuation of the clutch (where used).

According to the present invention the brake, clutch (where used) and throttle pedals of a vehicle are supported on a carriage mounted for a limited degree of fore-and-aft

movement, which may be effected by manual, electrical or hydraulic means.

The carriage may, if desired, support master cylinders for the brake and clutch (where used) operation, which cylinders are coupled by flexible hoses to fixed points in the brake and clutch fluid lines, whilst the throttle pedal is coupled to a fixed point on the carriage from which extends the flexible cable connected to the fuel inlet control point.

All the pedals may be journaled on a single cross-shaft mounted on the carriage or a separate cross-shaft may be provided for the throttle pedal.

One form of the invention is illustrated, as an example, in the accompanying drawings of which:—

Figure 1 is a vertical cross-section through the centre of a carriage supporting the control pedals of a vehicle.

Figure 2 is a stepped cross-section on the line 2—2 in Figure 1.

The pedal carriage 11 is formed from steel sheet and has a substantially horizontal centre portion 12 and two downwardly turned side portions 13. Between the side portions 13 a pedal fulcrum pin 14 is bolted by cap screws 15. The pin 14 supports the brake pedal 16, the clutch pedal 17 and a tube 18 which is placed as a spacer between the pedal bosses. The pin 14 also serves as a distance piece between the carriage side portions 13 and another distance piece 19 is similarly fixed at the front of the carriage.

On each portion 13, the cap screws 15 which retain the fulcrum pin 14 and the distance piece 19 also support an inner track 20 of a ball bearing slide. The track 20 engages with a number of ball bearings such

as 21 which are retained in a cage 22, and which also engage an outer track 23 bolted to a housing bracket 24.

The bracket 24 is also formed from steel sheet and is bolted as at 25 to the fascia panel 26 of the vehicle. The housing bracket 24 is journaled to receive a lead screw 27 which engages with a nut 28 bolted to the carriage centre portion 12. The lead screw 27 is extended at the rear end to engage a universally jointed coupler 29 which also engages a shaft 30 having a manually operable knob 31 at the outer end. The shaft 30 is supported by a bracket 39 which is welded to the housing 24.

The carriage centre portion 12 supports conventional hydraulic master cylinders and reservoirs 32, and the cranked ends of the brake and clutch pedals 16 and 17 each are pinned to the forked ends 33 of master cylinder operating rods 34. The master cylinders are each connected to the respective hydraulic pipes by flexible tubing 35.

The carriage side portions 13 each have at their lower ends a bush 36, and in the bush 36, is journaled an accelerator pedal rod 37. The rod is cranked to form the accelerator pedal arm 38; at one end whilst the other end is also cranked and, in conventional manner, is connected to a flexible cable throttle control (not shown) which is of sufficient length to allow for the carriage movement. The steering column is indicated at 45.

In order to seal the passenger compartment of the vehicle, the pedal assembly is enclosed by a casing 40 bolted to the dash panel 41 and the vehicle structure 42. The casing 40 has a hinged cover 43 which may be secured by a wing nut 44 and which provides access to the hydraulic reservoirs 32.

In operation, rotation of the knob 31 rotates the lead screw 27 within the housing

24 and this rotation causes the nut 28 to move along the lead-screw 27. As the nut 28 is fixed to the carriage 11, rotation of the knob 31 causes the carriage to move along the outer track 23 of the ball bearing slides and therefore the pedals 16, 17 and 38, being pivoted in the carriages 11, are moved in the fore-and-aft directions.

Thus, when the driver is sitting in the vehicle the position of the carriage may be readily adjusted so that the control pedals are in the most convenient position in relation to the fixed seat.

Instead of the manual actuation of the carriage the lead-screw may be actuated by a small electric motor, by an air motor or by a ratchet operated by hydraulic pressure.

WHAT WE CLAIM IS:—

1. Control pedals for a vehicle in which the brake, clutch (where used) and throttle pedals are supported on a carriage mounted for a limited degree of fore-and-aft movement.

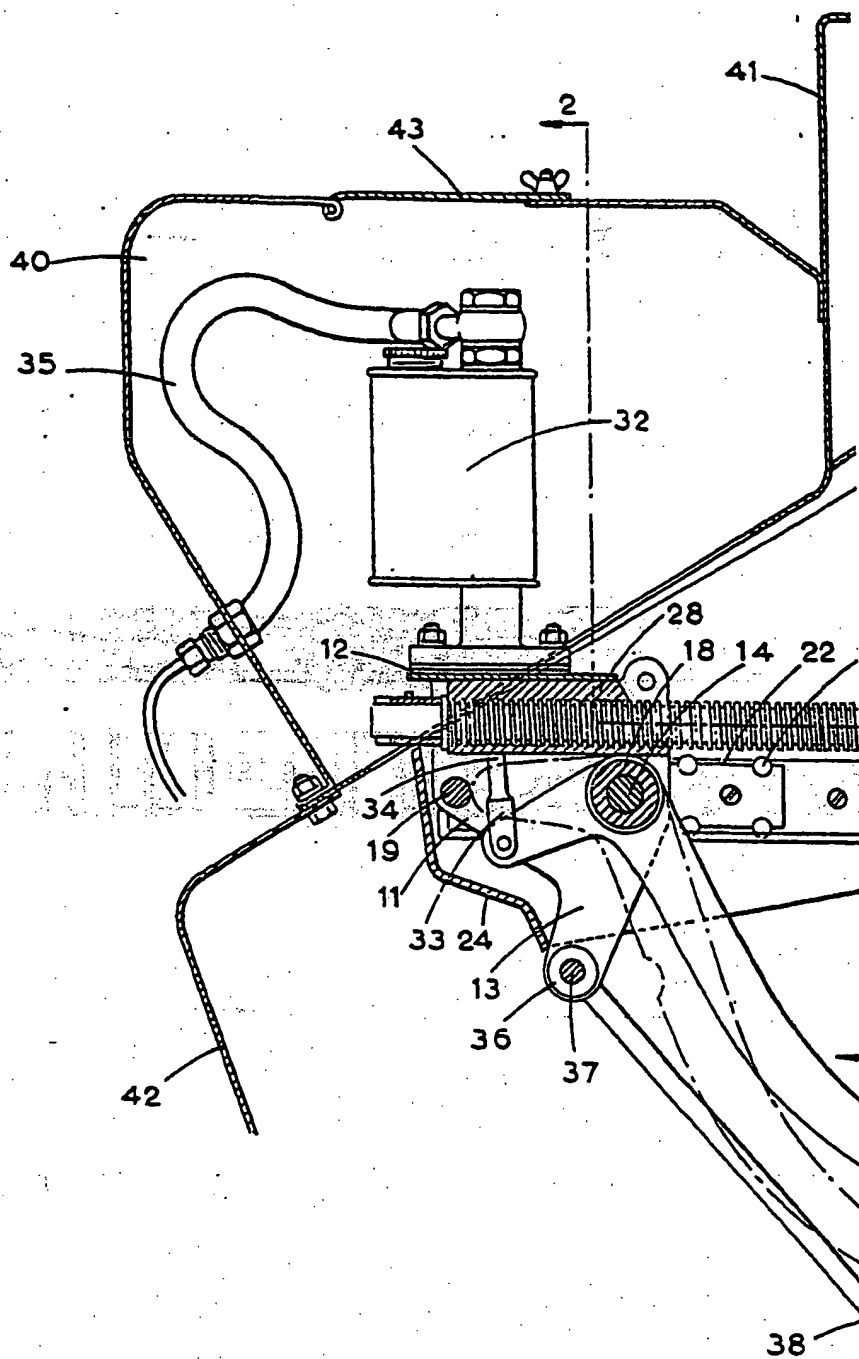
2. Control pedals as claimed in Claim 1 in which the carriage also supports master cylinders for the brake and clutch (where used) operations.

3. Control pedals as claimed in Claim 1 or 2, in which the fore-and-aft movement is imparted to the carriage by a lead-screw.

4. Control pedals as claimed in Claim 3, in which the lead-screw is actuated by manual, electric, hydraulic or pneumatic means.

5. Brake, clutch (where used) and throttle pedals substantially as herein described with reference to, and as illustrated in, the accompanying drawings.

T. M. CONNELLY,
Chartered Patent Agent,
Agent for the Applicants.



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COMPLETE SPECIFICATION

2 SHEETS

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the Original on a reduced scale*

Sheet 1

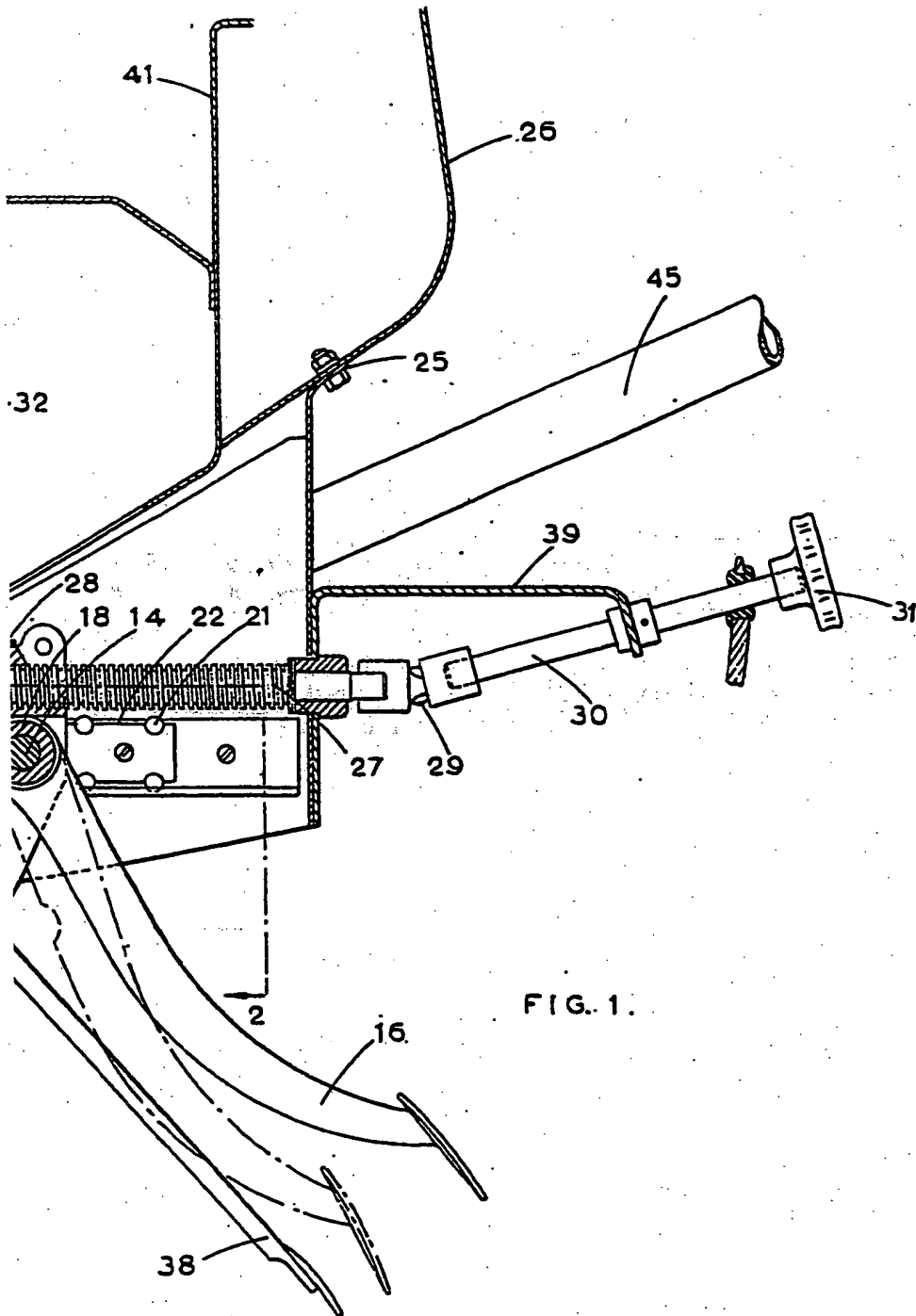


FIG. 2.

